

## I. PROJECT OVERVIEW

### GENERAL DESCRIPTION

The following drainage narrative provides the schematic design summary for the AvalonBay Issaquah Multifamily drainage plan. The stormwater design for the project is based on the requirements set forth in the 2017 City of Issaquah Stormwater Design Manual Addendum that references Ecology's 2012 Stormwater Management Manual for Western Washington as amended in 2014 (2014 SWMMWW).

The AvalonBay Issaquah Multifamily project is located at 1040 12<sup>th</sup> Ave NW within the City of Issaquah. The site is bound by Newport Way to the south, 12<sup>th</sup> Avenue to the west, a hotel (SpringHill Suites by Marriot) to the north, and a corporate office (Ednetics) to the east. The existing 4.05-acre site is currently developed with a commercial building (GE Healthcare Life Services) and associated surface parking (see *Figure 1 – Vicinity Map* in Appendix A).

The project proposes to develop a new multifamily residential building with alley access and a partial fire lane, which will add approximately 2.79 acres of impervious area to the site (see *Figure 3 – Proposed Conditions* in Appendix A). Site improvements will include storm conveyance, water quality, bioretention and new utility connections. The drainage design described in this report includes stormwater mitigation for the developed area of the project.

### EXISTING CONDITIONS

The AvalonBay Issaquah Multifamily project site is currently developed with a commercial building (GE Healthcare Life Services) and associated surface parking. The existing site stormwater is collected using a closed pipe system that routes through the adjacent parcel to the east (Ednetics site) and discharges to an existing stormwater detention pond within the 'Issaquah Commons' open space.

The King County iMap and City GIS do not show any classified wetlands on site nor on adjacent sites that would receive stormwater from the project. Along with this, there were no environmentally sensitive areas listed in the King County iMap associated with the project site. There is an existing open channel storm drainage system that runs along the projects southern boundary separating it from Newport Way.

The project site is listed as 'medium' under 'areas susceptible to groundwater contamination' in the King County iMap. Groundwater levels are known to fluctuate seasonally in this area and groundwater is anticipated to be present near the surface at this site. Based on preliminary information, an assumed value of 7 feet for groundwater depth below the surface was taken from a site boring. Further investigation will be performed to determine if groundwater will impact site design.

### PROPOSED CONDITIONS

Stormwater runoff from the developed site area will be collected and conveyed to the existing conveyance system through the adjacent parcel, maintaining the existing outfall location, and eventually discharging to the existing stormwater detention pond. On-site conveyance will consist of catch basins, area drains, and underground pipes that will be designed to meet the conveyance requirements listed in the 2014 SWMMWW.

The project site is located in the downtown Issaquah drainage basin controlled by an alternative flow control standard (see *Figure 4 – Alternative Flow Control Standard Map* in Appendix A). The alternative standard allows project sites to match the flows from the existing site condition. The proposed project will add approximately 2.79 acres of new/replaced impervious surface which produces a flow increase less than 0.15 CFS using a 15-minute

time step (see Appendix B for *MGSFlood Flow Control Calculations*). Based on the requirements set forth in the alternative flow control standard and the 2014 SWMMWW, no additional detention is required.

The proposed project will require runoff treatment (water quality) because it has more than 5,000 SF of new and replaced pollution generating impervious surfaces (PGIS). The downtown Issaquah drainage basin requires enhanced water quality treatment, which will be implemented through a modular wetland system upstream of the existing storm conveyance connection.

For on-site stormwater management, the project will utilize a series of bioretention planters to mitigate the roof area (see Appendix B for *MGSFlood Bioretention Calculations*).

See Table 1 and Table 2 below for the project area breakdown.

TABLE 1 – EXISTING CONDITIONS AREA BREAKDOWN

Land Cover	Area	Description
<b>Total Onsite Area</b>	<b>4.05 acres</b>	
Impervious Area	2.53 acres	Asphalt, concrete, roof areas
Pervious Area	1.52 acres	Landscaping, Till grass
<b>Total</b>	<b>4.05 acres</b>	Disturbed Onsite Area

See *Figure 2 – Existing Conditions* in Appendix A

TABLE 2 - PROPOSED CONDITIONS AREA BREAKDOWN

Land Cover	Area	Description
<b>Total Onsite Area</b>	<b>4.05 acres</b>	
Impervious Area	2.79 acres	Asphalt, concrete, roof areas
Pervious Area	1.26 acres	Landscaping, Till grass
<b>Total</b>	<b>4.05 acres</b>	Disturbed Onsite Area

See *Figure 3 – Proposed Conditions* in Appendix A

## II. MINIMUM REQUIREMENTS

This section will address the nine minimum requirements set forth in the 2014 SWMMWW. All nine minimum requirements apply, as this is a new development project with greater than 10,000 square feet of added impervious surface and greater than 5,000 square feet of pollution generating impervious surface.

### **MR #1: PREPARATION OF STORM WATER SITE PLANS**

Stormwater plans and reports that address each of the applicable minimum requirements will be prepared by a licensed civil engineer in accordance with City Requirements.

### **MR #2: CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN**

A temporary erosion and sediment control (TESC) plan and a SWPPP will be prepared and submitted at a later date.

### **MR #3: SOURCE CONTROL OF POLLUTION**

There will be no pollution-generating, post-development activities onsite that will require source control BMPs.

### **MR #4: PRESERVATION OF NATURAL DRAINAGE SYSTEM AND OUTFALLS**

Stormwater will continue to be discharged to the existing stormwater detention pond within the 'Issaquah Commons' open space.

### **MR #5: ON-SITE STORM WATER MANAGEMENT**

The project will employ On-site Stormwater Management BMPs to infiltrate, disperse, and retain stormwater runoff on site to the maximum extent feasible without causing flooding or erosion impacts. The feasibility of these BMPs will be evaluated at a later date.

### **MR #6: RUNOFF TREATMENT**

The proposed project contains more than 5,000 square feet of pollution generating impervious surface. Therefore, water quality facilities are required for new and replaced pollution generating surfaces. The downtown Issaquah drainage basin requires enhanced water quality treatment, which will be implemented through a modular wetland system upstream of the existing storm conveyance connection. The water quality system will be designed to treat the 2-year peak flow rate as required in the 2014 SWMMWW.

### **MR #7: FLOW CONTROL**

The proposed project is a new development with more than 10,000 square feet of new impervious area. Therefore, flow control is required for all new and replaced impervious and pervious surfaces. The project site is located in the downtown Issaquah drainage basin controlled by an alternative flow control standard, which allows project sites to match the flows from the existing site condition. Based on the requirements set forth in the alternative flow control standard and the 2014 SWMMWW, no additional detention is required.

### **MR #8: WETLAND PROTECTION**

There are no wetlands located on-site that will require protection.

### **MR #9: OPERATION AND MAINTENANCE**

An operation and maintenance manual for all proposed stormwater facilities and BMPs will be prepared and included at a later date.

### III. APPENDIX A

Figure 1 – Vicinity Map

Figure 2 – Existing Conditions

Figure 3 – Proposed Conditions

Figure 4 – Alternative Flow Control Standard Map

## IV. APPENDIX B

MGSFlood Flow Control Calculations

MGSFlood Bioretention Calculations